NUCLEAR ENERGY INSTITUTE

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May 7, 2003

Mr. James E. Lyons
Director, New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Generic Topic ESP-8 (Tables S3 and S4)

PROJECT 689

Dear Mr. Lyons:

In public meetings between September 2002 and March 2003, we discussed generic topic ESP-8 on fuel cycle and transportation environmental impacts. The issue involves the methodology that ESP applicants would use to address the environmental impacts associated with fuel cycle and transportation activities as currently reflected in the regulations—Tables S3 and S4 of 10 CFR 51.51 and 51.52, respectively—because those regulations are only applicable to light water cooled reactor designs. This letter outlines the general approach being used by the lead ESP applicants to address this issue.

For light water cooled reactor designs, the approach is as follows:

- Applicants will submit information sufficient to demonstrate that Table S3 [10 CFR 51.51] provides the basis for evaluating the contribution of the environmental effects from the uranium fuel cycle described in the table to the environmental costs of licensing a new reactor.

- Similarly, applicants will submit information sufficient to demonstrate that the values in Table S4 [10 CFR 51.52] represent the contribution of fuel and waste transportation to the environmental costs of licensing a new reactor.

For non-light water cooled reactor designs:

- Applicants will provide a description of the expected fuel cycle and transportation requirements for fuel and waste. Although Tables S3 and S4 may not be directly applied to non-light water cooled reactor designs, the environmental impacts described in the

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tables (and the supporting fuel cycle and transportation requirements, and associated technical evaluations) provide a ready benchmark against which valid comparisons can be made.

It's important to note that the environmental impacts for many aspects of the fuel cycle (e.g., uranium ore, conversion, enrichment, fabrication, transport) depend on the quantity of material or services required and are essentially independent of reactor design. Thus, the existing tables are appropriate as a starting point from which to conduct various comparisons of fuel cycle and transportation requirements and assess the resulting environmental impacts for non-light water cooled reactor designs.

The fuel cycle and transportation requirements will be compared to the corresponding requirements in the existing tables for the light water cooled reactors that were evaluated in WASH-1248 and WASH-1238. The evaluation will both discuss the uranium fuel cycle for non-light water cooled reactors and provide a comparison to the fuel cycle and transportation requirements for the light water cooled reactors previously evaluated. Observations and comparisons will be made regarding the scope and magnitude of the environmental impacts. It is expected that this approach will provide the staff with sufficient information to perform an evaluation of the environmental impacts of non-light water cooled reactor designs.

No response to this letter is necessary. If you have any questions concerning the industry approach for ESP-8, please contact me (rls@nei.org or 202-739-8128) or Russ Bell (rjb@nei.org or 202-739-8087).

Sincerely,

Original Signed By:

Ronald L. Simard

c: Ronaldo V. Jenkins, NRC/NRR
NRC Document Control Desk